

Appl. No. 10/605,563
Amdt. dated May 04, 2006
Reply to Office action of February 07, 2006

Amendments to the Claims

Listing of Claims:

- 5 Claim 1. (Original) A method for automatic gain control (AGC) in a receiver of a multiple-antenna system comprising a plurality of modules having a plurality of receiver antennas for substantially simultaneously receiving a plurality of signals via a single frequency band, the method comprising:
- 10 amplifying the plurality of received signals with at least an amplifier;
 generating a plurality of time domain samples of the amplified signals with at least an analog-to-digital converter (ADC) connected to the amplifier;
 determining at least a candidate power according to root-mean-square (RMS) powers of a first group of symbols received at the receiver antennas with a processor connected to the ADC; and
- 15 setting the gain of the amplifier according to a selected candidate power with the processor.
- Claim 2. (Original) The method of claim 1 wherein the received RMS power for one antenna is determined as the square root of the averaged product of each received
- 20 symbol and its complex conjugate for all symbols of the first group.
- Claim 3. (Original) The method of claim 2 wherein the candidate power is an RMS value of the RMS powers for each antenna determined for a second group of antennas.
- 25 Claim 4. (Original) The method of claim 3 wherein the second group is all receiver antennas.
- Claim 5. (Original) The method of claim 3 wherein the second group is receiver antennas

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having RMS powers larger than a first threshold.

Claim 6. (Original) The method of claim 3 wherein the second group is receiver antennas having RMS powers smaller than a second threshold.

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Claim 7. (Original) The method of claim 3 wherein the second group is receiver antennas having RMS powers within a predetermined range spanning a mode of RMS powers of all antennas.

10 Claim 8. (Original) The method of claim 2 wherein the candidate power is an arithmetical mean of the RMS powers for each antenna determined for a second group of antennas.

15 Claim 9. (Original) The method of claim 8 wherein the second group is all receiver antennas.

Claim 10. (Original) The method of claim 8 wherein the second group is receiver antennas having RMS powers larger than a first threshold.

20 Claim 11. (Original) The method of claim 8 wherein the second group is receiver antennas having RMS powers smaller than a second threshold.

25 Claim 12. (Original) The method of claim 8 wherein the second group is receiver antennas having RMS powers within a predetermined range spanning a mode of RMS powers of all antennas.

Claim 13. (Original) The method of claim 2 wherein the candidate power is a geometric mean of the RMS powers for each antenna determined for a second group of

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antennas.

Claim 14. (Original) The method of claim 13 wherein the second group is all receiver antennas.

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Claim 15. (Original) The method of claim 13 wherein the second group is receiver antennas having RMS powers larger than a first threshold.

Claim 16. (Original) The method of claim 13 wherein the second group is receiver antennas having RMS powers smaller than a second threshold.

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Claim 17. (Original) The method of claim 13 wherein the second group is receiver antennas having RMS powers within a predetermined range spanning a mode of RMS powers of all antennas.

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Claim 18. (Original) The method of claim 1 wherein the set gain is a target power divided by the candidate power.

Claim 19. (Original) The method of claim 1 wherein the symbols are IEEE 802.11a or 802.11g short preamble symbols of the received signals.

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Claim 20. (New) A method for automatic gain control (AGC) in a receiver of a multiple-antenna system, the method comprising:
receiving a first signal by a first antenna;
receiving a second signal by a second antenna;
amplifying the received first signal to generate a first amplified signal with a first amplifier;
amplifying the received second signal to generate a second amplified signal with a

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- second amplifier;
 - generating a first plurality of time domain samples of the first amplified signals;
 - generating a second plurality of time domain samples of the second amplified signals;
 - determining a first candidate power according a first group of symbols;
 - 5 determining a second candidate power according to a second group of symbols;
 - selecting one selected candidate power out of the first candidate power and the second candidate power according to a predetermined rule; and
 - setting a gain of the first and second amplifiers according to a selected candidate power.
- 10 Claim 21. (New) The method of claim 20 wherein the first and second candidate powers are determined according to root-mean-square (RMS) powers of the first and second group of symbols respectively.